

Notice of Allowability

Application No.

10/615,999

Examiner

Tho D. Ta

Applicant(s)

JORDAN ET AL.

Art Unit

2833

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to interview summary dated 09/08/04.
2. ☒ The allowed claim(s) is/are 1, 2, 4-7, 9, 10, 12, 14-16, 18 and 19.
3. ☒ The drawings filed on 09 July 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


THO D. TA
PRIMARY EXAMINER

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Leon D. Rosen on 09/08/04.

2. The application has been amended as follows:

1. (Currently amended) A connection arrangement for mounting on a circuit board, which includes a first connector having a housing with an opening leading to a cavity, said first connector having a contact arrangement that includes first and second contacts each mounted on said housing and each being connectable to the circuit board, said first contact including a moveable beam lying in said cavity and biased upward toward an initial position in which said beam engages said second contact, said connection arrangement including a plug with a frame and a plug contact part that can be moved down through said opening to engage said beam and downwardly deflect said beam out of engagement with said second contact, including:

walls forming a stop lying under the beam for limiting its downward movement; and wherein

said plug contact part is moveable primarily upward and downward in said frame, and said plug includes a spring that urges said plug contact pad to move downwardly relative to said frame; wherein:

said beam comprises a first substantially flat beam portion, a second beam portion extending largely downwardly towards the circuit board from the first beam portion, and a third beam portion extending largely horizontally from a bottom of said second beam portion, and said plug contact pad is positioned to push down said third beam portion against the stop.

Claim 3. (Canceled)

6. (Currently amended) A connection arrangement that includes a circuit board with conductive traces and a connector mounted on the board, wherein:

said connector includes a housing with a cavity and an opening leading to said cavity;

first and second contacts each mounted on said housing and connected to one of said traces on the board, said first contact including a moveable beam lying in said cavity and biased against said second contact but deflectable downward out of engagement with said second contact;

stop means lying directly under said beam for stopping downward movement of said beam; wherein:

said first contact has a mounted pad mounted on said housing and a beam that extends forwardly from said mounted pad, said beam having a beam front portion with a tongue extending back toward said mounted part and downward toward said circuit board, from the beam front portion, wherein the movement of the beam is limited by the distance between a lower end of the tongue and the stop means.

Claim 8. (Canceled)

9. (Currently amended) A connector system comprising a receptacle and a plug for mating with the receptacle, wherein the receptacle includes a housing forming a cavity with an opening for receiving at least a portion of said plug, a receptacle first inner contact mounted on said housing, and a receptacle outer contact mounted on said housing, wherein:

said plug includes coaxial inner and outer plug contacts for engaging said receptacle first inner contact and outer contact, respectively;

said plug inner contact is resiliently biased downward and is deflectable upward with respect to said plug outer contact;

a stop that lies under said receptacle first inner contact, whereby after said plug inner contact presses down said receptacle first inner contact against said stop said plug outer contact can continue to move down until it lies in firm engagement with said receptacle outer contact; wherein:

said receptacle is mounted on said circuit board;

said circuit board has an upper face with a trace forming said stop;

said receptacle first inner contact includes a deflectable beam that is downwardly deflectable against said trace forming said stop.

Claim 11. (Canceled)

12. (Currently amended) A connector system comprising a circuit board, a receptacle and a plug for mating with the receptacle, wherein the receptacle includes a housing mounted on the circuit board and forming a cavity with an entrance for receiving said plug, first and second receptacle contacts mounted on said housing, said first contact including a resilient beam biased upward into engagement with said second contact but being resiliently deflectable downwardly by said plug out of engagement with said second contact, wherein:

said circuit board has an area lying directly under a pad of said beam, so said beam engages said circuit board area when said beam is downwardly deflected by said plug; wherein:

said plug includes a plug outer portion that can be pressed toward said housing only to a predetermined position, said plug has a plug housing and said plug has an inner contact with a tip, said inner contact being slideable up and down in said plug housing, and said plug has a spring that urges said tip downward beyond said housing, said plug inner contact being slideable

sufficiently that said tip presses said beam against said circuit board area when said plug outer portion lies in said predetermined position.

Claim 13. (Canceled)

14. (Currently amended) A connection system that includes a circuit board with a conductive trace, a plug and a receptacle that has an opening that receives a portion of the plug, wherein:

said plug includes a plug housing, a plug inner contact with a tip, said plug housing having a largely vertically-extending passage said plug inner contact being slideable in said passage, and a spring that urges said plug inner contact to slide downward, said tip lying below and outside of said passage when not deflected upwardly; wherein:

said receptacle has a first contact with a deflectable portion that is engaged by said tip of said plug inner contact with said deflectable portion deflected against said conductive trace.

Claim 17. (Canceled)

3. The following is an examiner's statement of reasons for allowance: In regard to claim 1, the prior art fails to provide, teach or suggest a third beam portion extending largely horizontally from a bottom of the second beam portion. In regard to claim 6, the

Art Unit: 2833

prior art fails to provide, teach or suggest the beam having a beam front portion with a tongue extending back toward the mounted part and downward toward the circuit board, from the beam front portion. In regard to claim 9, the prior art fails to provide, teach or suggest the receptacle first inner contact includes a deflectable beam that is downwardly deflectable against the trace forming the stop. In regard to claim 12, the combination of claim 12 and the claimed structure of the plug (from canceled claim 13) would render the claims unobvious over the prior art. In regard to claim 14, the prior art fails to provide, teach or suggest the receptacle has a first contact with a deflectable portion that is engaged by the tip of the plug inner contact with the deflectable portion deflected against the conductive trace.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tho D. Ta whose telephone number is (571) 272-2014. The examiner can normally be reached on M-F (8:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula A. Bradley can be reached on (571) 272-2800 ext 33. The fax phone

Art Unit: 2833

number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



THO D. TA
PRIMARY EXAMINER

tdt
09/08/04